

REMARKS

This responds to the Office Action mailed on May 3, 2007.

No claims are amended, cancelled, or added; as a result, claims 1-29 remain pending in this application.

§103 Rejection of the Claims

Claims 1-4 were rejected under 35 USC § 103(a) as being unpatentable over Jean et al. (U.S. 2004/0239337) in view of Liu (U.S. 2005/0078767).

Jean is cited to show generation of a carrier signal, and Liu is cited to show use of a window function applied to a signal. Liu describes application of a window function in the context of a Finite Impulse Response filter (FIR filter).

Liu does not therefore recite shaping a carrier signal with a window function, but applies the window function to pulse shape a modulated signal before amplification (*see, e.g.*, paragraph 26). Liu therefore does not generate an ultrawideband pulse, as is recited in the pending claims, or do so by applying the window function to a carrier signal.

Reexamination and allowance of Claim 1, and of its dependents 2-5, is therefore respectfully requested.

Claims 6 and 12 were rejected under 35 USC § 103(a) as being unpatentable over Shattil (U.S. 2004/0213351) and in view of Taguchi (U.S. 4,815,135).

Shattil teaches use of subcarrier interference to produce or synthesize a variety of transmission waveforms, including ultrawideband signals as described in paragraph 27. Shattil does not teach mixing a carrier and window function to generate an ultrawideband signal.

Taguchi discusses a system for speech analysis and synthesis operating on audible sound signals. Referring to Figure 14B and the cited col. 17, ln. 30-36, Taguchi uses window functions as shown at 47 in a speech signal receiver as shown in Fig. 14B applied to phase resetting functions 41 applied to parameter inversions generated from the spectrum observed in spectrum analyzer 38 of a speech signal. The window function is also applied to multiplier 44, which

outputs the windowed products of the sinusoidal signals produced in phase resetting functions 41 and variable gain amplifiers 42.

Taguchi does not recite anything related to ultrawideband pulses or processing such, or generation or manipulation of any RF signal. More specifically Taguchi fails to mix or combine a carrier signal with any other signal such as a window function to produce an ultrawideband radio frequency product signal, as no ultrawideband radio frequency product signal can be produced.

Reexamination and allowance of pending claim 6, and its dependents 7-11, as well as claim 12, and its dependents 13-17, is therefore respectfully requested.

Claims 18-20 were rejected under 35 USC § 103(a) as being unpatentable over Jean et al. (U.S. 2004/0239337) in view of Reusens et al. (U.S. 6,240,129) and further in view of Liu (U.S. 2005/0078767).

Jean is again cited to show generation of a carrier signal. Reusens describes a multitone modem system in which a window function R (*see, e.g.* Fig. 2) is applied to a discrete multitone (DMT) modem symbol, and is an integer multiple of the length of the audio carrier signals that make up the DMT symbol (*see, col. 8, ln. 2-27*).

Reusens therefore describes a window function longer than a carrier signal, but it is a rectangular function as stated in col. 8, ln. 12, and as shown in Fig. 2, and not a sinusoidal function as is recited in claim 18.

Liu again describes application of a window function in the context of a Finite Impulse Response filter (FIR filter), and does not recite shaping a carrier signal with a window function, but applies the window function to pulse shape a modulated signal before amplification (*see, e.g., paragraph 26*).

Liu (and the other cited references) fail to produce an ultrawideband signal by mixing a carrier signal and window shaping signal as described in the claims, and fail to teach gating a product of a carrier and window shaping signal to produce an ultrawideband signal.

Because the piecemeal assembly of elements cited in these cases fails to teach mixing and gating a carrier and a sinusoidal window shaping signal to produce an ultrawideband signal,

claim 18 and its dependents are believed to be patentably distinct from the prior art.

Reexamination and allowance of these pending claims is therefore respectfully requested.

Claims 25-29 were rejected under 35 USC § 103(a) as being unpatentable over Shattil (U.S. 2004/0213351) and in view of Taguchi (U.S. 4,815,135).

Shattil again teaches use of subcarrier interference to produce or synthesize a variety of transmission waveforms, including ultrawideband signals as described in paragraph 27. Shattil does not teach mixing a carrier and window function to generate an ultrawideband signal.

Taguchi discusses a system for speech analysis and synthesis operating on audible sound signals, including using window functions as shown at 47 in a speech signal receiver as shown in Fig. 14B applied to phase resetting functions 41 applied spectrum signals derived from a speech signal. The window function is also applied to multiplier 44, which outputs the windowed products of the sinusoidal signals produced in phase resetting functions 41 and variable gain amplifiers 42, again as applied to audio-frequency speech signals.

Taguchi again fails to recite anything related to ultrawideband pulses or processing such, or generation or manipulation of any RF signal. More specifically Taguchi fails to mix or combine a carrier signal with any other signal such as a window function to produce an ultrawideband radio frequency product signal, as no ultrawideband radio frequency product signal can be produced in Taguchi.

Piecemeal combination of a mixer from the speech processing system of Taguchi with Shattil is not only impermissible, but still lacks a mixer operable to produce an ultrawideband RF product signal as a product of a carrier and a sinusoidal window function.

Reexamination and allowance of pending claims 25-29 is therefore respectfully requested.

Allowable Subject Matter

Claims 8 and 23 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Because these claims depend from base claims not anticipated by the prior art as described above, they are believed to be in condition for allowance in their present form.

RESERVATION OF RIGHTS

In the interest of clarity and brevity, Applicant may not have addressed every assertion made in the Office Action. Applicant's silence regarding any such assertion does not constitute any admission or acquiescence. Applicant reserves all rights not exercised in connection with this response, such as the right to challenge or rebut any tacit or explicit characterization of any reference or of any of the present claims, the right to challenge or rebut any asserted factual or legal basis of any of the rejections, the right to swear behind any cited reference such as provided under 37 C.F.R. § 1.131 or otherwise, or the right to assert co-ownership of any cited reference. Applicant does not admit that any of the cited references or any other references of record are relevant to the present claims, or that they constitute prior art. To the extent that any rejection or assertion is based upon the Examiner's personal knowledge, rather than any objective evidence of record as manifested by a cited prior art reference, Applicant timely objects to such reliance on Official Notice, and reserves all rights to request that the Examiner provide a reference or affidavit in support of such assertion, as required by MPEP § 2144.03. Applicant reserves all rights to pursue any cancelled claims in a subsequent patent application claiming the benefit of priority of the present patent application, and to request rejoinder of any withdrawn claim, as required by MPEP § 821.04.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney ((612) 349-9581) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 5th day of November 2007.

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Signature

